THE COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

D.T.E. 05-27

DIRECT TESTIMONY OF
EARL M. ROBINSON

DEPRECIATION

IN SUPPORT OF
BAY STATE GAS COMPANY'S
REQUEST FOR AN INCREASE IN BASE REVENUE AND
OTHER RATE MODIFICATIONS

EXH. BSG/EMR-1

April 27, 2005

TABLE OF CONTENTS

1   I.   INTRODUCTION

2

3   Q.   WHAT IS YOUR NAME, OCCUPATION AND BUSINESS ADDRESS?

4   A.   My name is Earl M. Robinson. I am President and Chief Executive Officer

5   of the Weber Fick & Wilson Division ("WFW") of AUS Consultants -

6   Utility Services. WFW is a public utility consulting firm specializing in

7   preparing various financial studies including depreciation, valuation, cost of

8   service and other analysis for the utility industry and regulatory agencies

9   AUS Consultants provides a wide spectrum of consulting services through

10   its various affiliated groups which include Utility Services, Valuation

11   Services, ICR Survey Research, and Marketing Systems. The WFW

12   Division is located at 275 Grandview Avenue Suite 100, Camp Hill,

13   Pennsylvania 17011.

14   Q.   HAVE YOU PREPARED AN APPENDIX WHICH CONTAINS YOUR

15   QUALIFICATIONS AND EXPERIENCE?

16   A.   Yes. Appendix A to my direct testimony contains a summary of my qualifications

17   and experience.

18   Q.   WHAT IS THE PURPOSE OF YOUR TESTIMONY?

19   A.   The purpose of my testimony is to set forth the results of my review and

20   analysis of the plant in service of Bay State Gas Company ("Bay State" or

21   the "Company") which was conducted in the process of preparing a

1   depreciation study as of December 31, 2003. Exh. BSG/EMR-2. In

2   completing the study, my task included an investigation and analysis of the

3   Company's historical plant data, together with an interpretation of the

4   Company's past experience and future expectations, to determine the

5   remaining lives of the Company's property. The study utilized the resulting

6   remaining lives, the results of our salvage analysis, the Company's vintaged

7   plant in service investment and depreciation reserve to develop

8   recommended average remaining life depreciation rates, and depreciation

9   expense, related to the Company's plant in service.

10   **II.   DEPRECIATION DEFINED**

11

12   **Q.   HOW IS DEPRECIATION DEFINED?**

13   A.   Depreciation is defined in the 1996 NARUC "Public Utility Depreciation

14   Practices" publication as follows: "Depreciation, as applied to depreciable

15   utility plant, means the loss in service value not restored by current

16   maintenance, incurred in connection with the consumption or prospective

17   retirement of utility plant in the course of service from causes which are

18   known to be in current operation and against which the utility is not

19   protected by insurance. Among the causes to be given consideration are

20   wear and tear, decay, action of the elements, inadequacy, obsolescence,

21   changes in the art, changes in demand, and requirements of public

1   authorities."

2 Q. **WHY IS DEPRECIATION IMPORTANT TO THE REVENUE**

3   **REQUIREMENTS OF A UTILITY COMPANY?**

4 A. Depreciation is important because, as the above definition describes,

5   depreciation expense enables a company to recover in a timely manner the

6   capital costs related to its plant in service benefiting the company's

7   customers. Appropriate depreciation rates will allow recovery of a

8   company's investments in depreciable assets over a life that provides for full

9   recovery of the investments, less net salvage. Without the appropriate

10   recovery of depreciation costs, the Company ultimately will not be able to

11   meet its financial obligations related to the continued provision of service to

12   customers. Furthermore, the inclusion of the appropriate level of

13   depreciation recovery in revenue requirements serves to reduce overall costs

14   (total of depreciation and return) to customers as opposed to a situation

15   where an inadequate level of annual depreciation expense is currently being

16   provided in rates.

17   **III.   PREVIOUS DEPRECIATION STUDIES PREPARED FOR BAY**
18   **STATE GAS COMPANY**
19
20 Q. **HAVE YOU PREPARED PREVIOUS DEPRECIATION STUDIES OF THE**

21   **COMPANY'S PROPERTY?**

22 A. Yes, I have.

1

2   Q.   **DID THOSE EARLIER STUDIES SIGNIFICANTLY INFLUENCE YOUR**

3   **RECOMMENDATIONS IN THE CURRENT STUDY?**

4   A.   No. While the underlying historical data that contributed to the results of the

5   earlier depreciation studies for the Company are included with the historical

6   depreciation database used for the current depreciation study, the previous

7   study results do not have a direct bearing on the current study results. That

8   is because each depreciation study is performed as an independent analysis

9   of the aggregate data up to the study date. Equally, if not more, important is

10   the impact of more recent and anticipated events on the future depreciation

11   parameters of each of the Company's depreciable property groups.

12   Q.   **PLEASE PROVIDE A BRIEF EXPLANATION OF THE RESULTS OF**

13   **THE EARLIER DEPRECIATION STUDIES AS COMPARED TO THE**

14   **RECOMMENDATIONS IN THE CURRENT STUDY.**

15   A.   I prepared two earlier comprehensive depreciation studies relative to the

16   Company's plant in service. The first study performed was based upon the

17   Company's plant in service as of December 31, 1991. The second study was

18   prepared based upon the Company's plant in service as of December 31,

19   1998. It is common practice and generally recognized as desirable within the

20   utility industry that depreciation studies be performed at intervals of

21   approximately five (5) years.

1   The December 31, 1991 depreciation study was filed in conjunction with

2   the Company's most recent prior rate case (and as approved by the Department)

3   produced a composite depreciation rate of 3.97 percent.

4   The December 31, 1998 study which utilized the then current and

5   anticipated depreciation factors, produced a composite depreciation rate of

6   3.57 percent. By 1998, the Company's investment mix had changed and the

7   depreciation rates that had produced a composite rate of 3.97 when applied

8   to December 31, 1991 plant balances produced an aggregate depreciation

9   rate of 3.79 percent when applied to December 31, 1998 plant balances.

10   At the time of the 1998 study, the Company's plant activity with

11   regard to mains and services had slowed somewhat and there were less

12   significant plant changes and net salvage factors impacting the resulting

13   depreciation parameters. Not only had plant investment growth slowed, but

14   also the level of negative net salvage had declined. Accordingly,

15   depreciation rates declined from the level of the 1991 depreciation rates.

16   More recently, the ownership and plant investment experience of the

17   Company have changed. Plant investment activity has increased and

18   negative net salvage has escalated. Furthermore, future net salvage forecasts

19   have been prepared to identify the ultimate overall net salvage that will be

20   experienced over the life of each of the property groups. Accordingly, the

21   current depreciation study results are reflective of present and anticipated

1   factors.

2   **IV.   CURRENT DEPRECIATION STUDY OF BAY STATE'S PLANT**
3   **IN SERVICE**

4
5   Q. **WHAT IS YOUR PROFESSIONAL OPINION WITH REGARD TO THE**

6   **RESULTS OF THE CURRENT DEPRECIATION STUDY?**

7   A. In my opinion, the proposed depreciation rates resulting from the current

8   depreciation study are reasonable and appropriate given that they incorporate the

9   service life and net salvage parameters currently anticipated for each of the

10   Company's property group investments over their average remaining lives.

11 Q. **WHAT STEPS WERE INVOLVED IN PREPARING THE SERVICE LIFE**

12   **AND SALVAGE DATABASE THAT YOU UTILIZED?**

13 A. My comprehensive depreciation analysis included a detailed analysis of the

14   Company's fixed capital books and records through December 31, 2003. The

15   Company's historical investment cost records for each account have been

16   assembled into a depreciation database upon which a detailed service life and

17   salvage analysis was performed using standard depreciation procedures.

18 Q. **WHAT IS THE PURPOSE OF THE HISTORICAL DATABASE?**

19 A. The historical service life and net salvage data is a basic depreciation study tool

20   that is assembled to prepare a depreciation study. The historical database is used

21   to make assessments and judgments concerning the service life and salvage

22   factors that have actually been achieved, and (along with information relative to

1   current and prospective factors) to determine the appropriate future lives over

2   which to recover the Company's depreciable fixed capital investments.

3   According to this standard depreciation analysis, the Company's depreciation

4   database compiled through December 31, 2003, which contains detailed vintage

5   level information, was used to develop observed life tables. The development of

6   the observed life tables from the historical information was completed by

7   grouping like aged investments within each property category and identifying the

8   level of retirements that occur through each successive age to develop the

9   applicable observed life tables. The resulting observed lives were then fitted to

10   standard Iowa Curves to estimate each property group's historically achieved

11   average service life.

12   Likewise, the net salvage database was used as a basis to identify historical

13   experience and trends and to determine each property group's recommended net

14   salvage factors. This was accomplished by preparing various three year rolling

15   band analyses of salvage components as well as a forecast based on the

16   Company's historical salvage experience.

17 Q.   **IN THE PREPARATION OF THIS, AND OTHER, DEPRECIATION**

18   **STUDIES, HAVE YOU UTILIZED INFORMATION FROM**

19   **ADDITIONAL SOURCES WHEN ESTIMATING SERVICE LIFE AND**

20   **SALVAGE PARAMETERS?**

21 A.   Yes. In addition to the historical data obtained from the Company's books and

1 records, information was obtained from Company personnel relative to current

2 operations and future expectations with respect to depreciation. An on-site visit

3 was made to various of the Company's operation centers, at which time meetings

4 were held with Company operations management. Physical inspections were also

5 conducted of representative operating property. In the course of completing the

6 depreciation study, I also incorporated professional knowledge obtained from my

7 more than thirty (30) years of utility industry depreciation experience.

8 Q. **DO YOU HAVE A DEPRECIATION STUDY REPORT WHICH**

9 **SUMMARIZES THE RECOMMENDATIONS RESULTING FROM YOUR**

10 **DEPRECIATION SERVICE LIFE AND SALVAGE ANALYSIS?**

11 A. Yes. The report is Exhibit BSG/EMR-2 entitled "Bay State Gas Company

12 Depreciation Study as of December 31, 2003", and summarizes the results of my

13 service life and salvage analysis.

14 Q. **PLEASE BRIEFLY DESCRIBE THE INFORMATION INCLUDED IN**

15 **THE DEPRECIATION STUDY REPORT.**

16 A. The study report is divided into seven sections. Two key portions of the report are

17 Sections 2 and 4. Section 2 includes the summary schedules listing the present

18 and proposed depreciation rates for each depreciable property group and other

19 depreciation rate development schedules. Section 4 contains a narrative

20 describing the factors considered in selecting service life parameters for the

21 Company's property. The various other sections of the report contain detailed

1   information and/or documentation supporting the schedules contained in Sections

2   2 and 4. A table of contents lists the complete contents of the report. In addition,

3   Section 1 contains a brief narrative summary or overview of the entire report.

4 Q. **WHAT WAS THE SOURCE OF THE DATA WHICH WAS UTILIZED AS**

5   **A BASIS FOR THE DEPRECIATION RATES?**

6 A. As previously discussed, all of the historical data utilized in the course of

7   performing the detailed service life and salvage study were obtained from the

8   Company's books and records. Historical vintaged data (additions, retirements,

9   adjustments, and balances) were obtained for each depreciable property group.

10 Q. **ARE THERE STANDARD METHODS UTILIZED TO COMPLETE A**

11   **SERVICE LIFE ANALYSIS OF A COMPANY'S HISTORICAL**

12   **PROPERTY INVESTMENTS?**

13 A. Yes. As discussed in Section 3 of the depreciation study report as well as later in

14   this testimony, the two most common methods are the Retirement Rate Method

15   and the Simulated Plant Record Method. The method chosen to study a

16   company's historical data is dependent upon whether aged or un-aged data is

17   available. If specific aged data is available, the Retirement Rate Method is used.

18   If only un-aged data is available, the Simulated Plant Record Method is used.

19 Q. **WAS YOUR STUDY PREPARED UTILIZING ONE OF THOSE**

20   **ACCEPTED STANDARD METHODS?**

21 A. Yes. The Company maintains aged plant records. Therefore, the Retirement Rate

1   Method was utilized in the depreciation study of the Company's property.

2   **A.   DESCRIPTION OF THE DEPRECIATION METHOD,**
3   **PROCEDURE AND TECHNIQUE USED**

4

5   Q.   **PLEASE DESCRIBE THE RELATIONSHIP OF DEPRECIATION**

6   **METHODS, PROCEDURES, AND TECHNIQUES AND IDENTIFY**

7   **WHAT METHOD, PROCEDURE, AND TECHNIQUE WAS UTILIZED**

8   **TO DEVELOP THE DEPRECIATION RATES FOR THE COMPANY'S**

9   **PROPERTY?**

10   A.   Inherent in all depreciation calculations is an overall method, such as the Straight

11   Line Method (which is the most widely used approach within the utility industry)

12   to depreciate property. Other methods available to develop average service lives

13   and depreciation rates are accelerated and/or deferral approaches such as the Sum

14   of the Years Digits Method or Sinking Fund Method.

15   In addition, there are several procedures that can be used to arrange or

16   group property by sub-groups of vintages to develop applicable service lives.

17   These procedures include the Broad Group, the Equal Life Group and other

18   procedures. Due to the existence of very large quantities of property units within

19   utility operating property, utility property is typically grouped into homogeneous

20   categories as opposed to being depreciated on an individual unit basis. While the

21   Equal Life Group procedure is viewed as being the more definitive procedure for

22   identifying the life characteristics of utility property and as a basis for developing

1   service lives and depreciation rates (see my comments on the Equal Life Group

2   procedure later in my testimony), the Broad Group Procedure is more widely

3   utilized throughout the utility industry by regulatory commissions as a basis for

4   depreciation rates.

5   The distinction between the two procedures is in the manner in which

6   recovery of the cost is achieved. Under the Broad Group Procedure, the useful

7   life and resulting depreciation rate is based upon the overall average of the group,

8   while under the Equal Life Group Procedure, the useful life and resulting

9   depreciation rate is based upon separately recovering the investment in each equal

10   life group within the property category over the actual life of the property in that

11   group.

12   A brief example (with a property group that has three units/three equal life

13   groups of like property) will demonstrate the difference between the two

14   procedures. The example incorporates the assumption that unit No. 1 (or equal

15   life group of property) will retire after one year, unit No. 2 (or equal life group)

16   will retire after two years, and Unit No. 3 (or equal life group) will retire after

17   three years. Accordingly, the average life of all three (groups) is three (3) years

18   (1+2+3÷2). Under the Broad Group Procedure, the average useful life and

19   resulting depreciation rate is calculated based upon the three (3) year average life.

20   The resulting annual depreciation rates would be 33.33 percent in every year.

21   Conversely, under the Equal Life Group Procedure, each year's average

1   life and resulting depreciation rate is calculated by using the period of time during

2   which the portion of the property group remains in service. Since unit No. 1 (or

3   that portion of the account) was retired from service after one year, the entire

4   investment for that property is recovered over one (1) year. Likewise, since unit

5   No. 2 (or that portion of the account) will live two years, the recovery of that

6   portion of the account will occur over two years. Lastly, unit No. 3 (or that

7   portion of the account) is recovered over three years. Hence, the useful average

8   life for the property group in the first year is 1.64 years and the first year's annual

9   depreciation rate is 61.11 percent. In the second year, the useful average life of

10   the surviving group is 3.6 years and the second year's depreciation rate drops to

11   27.78 percent. This occurs because during the first year, unit No. 1 (or that

12   portion of the account) was fully recovered. Likewise, in year three the useful life

13   of the surviving group is 9 years and the depreciation rate further drops to 11.11

14   percent. See Table EMR-1 on page 13.

15   Finally, the depreciable investment needs to be recovered over a defined

16   period of time (through use of a technique), such as the Whole Life or Average

17   Remaining Life of the property group. The distinction between the Whole Life

18   and Average Remaining Life Techniques is that under the Whole Life Technique,

19   the depreciation rate is based on the recovery of the investment and average net

20   salvage over the average service life of the property group. In comparison, under

21   the Average Remaining Life Technique, the resulting annual depreciation rate

1   incorporates the recovery of the investment (and future net salvage) less any

2   recovery experienced to date over the average remaining life of the property

3   group. The Average Remaining Life Technique is clearly superior in that it

4   incorporates all of the current and future cost components in setting the proposed

5   annual depreciation rate as opposed to only some of the current and future cost

6   components as is the case with the Whole Life Technique.

7

Table EMR-1

Illustration of Development of Equal Life Group Yearly ASL and Annual Depreciation Rate

		ELG Average Life Calculation				ELG Depreciaiton Rate Calculation			
Year		Investment	Recovery Period (Yrs)	ASL (Years)	Weight	Investment	Recovery Period (Yrs)	Annual Rate-%	Recovery Amount
1	Group # 1	300	1		300	300	1		300
	Group # 2	300	2		150	300	2		150
	Group # 3	300	3		100	300	3		100
	Total	900		1.64	550	900		61.11%	550
2	Group # 1	300	0		0	300	0		0
	Group # 2	300	2		150	300	2		150
	Group # 3	300	3		100	300	3		100
	Total	900		3.60	250	900		27.78%	250
3	Group # 1	300	0		0	300	0		0
	Group # 2	300	0		0	300	0		0
	Group # 3	300	3		100	300	3		100
	Total	900		9.00	100	900		11.11%	100

1   The depreciation methods, procedures, and techniques can be used

2   interchangeably. For example, one could use the Straight Line Method with the Broad

3   Group Procedure and the Average Remaining Life Technique, or the Straight Line

4   Method with the Equal Life Group Procedure and Average Remaining Life Technique,

5   or combinations thereof.

6   The depreciation rates set forth in my depreciation study report were developed

7   utilizing the Straight Line Method, the Broad Group Procedure, and the Average

8   Remaining Life Technique.

9   Q.   **WHY WERE THE INDICATED DEPRECIATION METHOD,**

10   **PROCEDURE AND TECHNIQUE UTILIZED?**

11   A.   The Straight Line Method is widely understood, recognized, and utilized almost

12   exclusively for depreciating utility property.

13   The Broad Group Procedure recovers the Company's investments over the

14   average period of time in which the property is providing service to the

15   Company's customers. While the Equal Life Group procedure is viewed as a

16   superior procedure, I used the Broad Group Procedure because it is consistent

17   with depreciation methods and procedures generally accepted by the Department

18   and is the approach underlying the depreciation rates approved by the Department

19   in D.P.U. 92-111.

20   Finally, the amount of annual depreciation must be based upon the

21   productive life over which the un-depreciated capital investment is recovered (the

1   Average Remaining Life Technique). The utilization of the Average Remaining

2   Life Technique to develop the applicable annual depreciation expense (over the

3   average remaining life) assures that the Company's property investment is fully

4   recovered over the useful life of the property, and that inter-generational inequities

5   are avoided as current customers will pay their fair share of depreciation expense.

6   The determination of the productive remaining life for each property group

7   relies on a study of both past experience and future expectations and develops the

8   appropriate total life and applicable depreciation rates for each of the Company's

9   property groups. The Average Remaining Life Technique incorporates all of the

10   Company's fixed capital cost components, thereby better assuring full recovery of

11   the Company's embedded net plant investment and related costs. The Average

12   Remaining Life Technique gives consideration not only to the average service life

13   and survival characteristics plus the net salvage component, but also recognizes

14   the level of depreciation which has been accrued to date in developing the

15   proposed depreciation rate. The Average Remaining Life Technique is used by

16   regulated companies and regulatory agencies because it allows full recovery by the

17   end of the property's useful life -- no more and no less.

18 Q. **PLEASE EXPLAIN THE UTILIZATION OF GROUP DEPRECIATION**

19   **PROCEDURES.**

20 A. Group depreciation procedures are utilized to depreciate property when more than

21   one item of property is being depreciated. Such an approach is appropriate

1   because all of the items within a specific group typically do not have identical

2   service lives, but have lives which are dispersed over a range of time. Utilizing a

3   group depreciation procedure allows for a uniform application of depreciation

4   rates to groups of similar property in lieu of performing extensive depreciation

5   calculations on an item-by-item basis. As previously mentioned, the two more

6   common group depreciation procedures are the Broad Group and Equal Life

7   Group approaches.

8   I have used the Broad Group Procedure consistent with the historic and

9   current practice in Massachusetts. The Broad Group Procedure recovers the

10   investment within the asset group over the average service life of the property

11   group. Given that there is dispersion within each property group, there are

12   variations of retirement ages for the many investments within each property

13   group. That is, some properties retire early (before average service life) while

14   others retire at older ages (after average service life) with the weighted average

15   retirement age of the total property group being the attained average service life.

16   The Equal Life Group Procedure, however, allocates the capital cost of

17   property in the group to annual expense in accordance with the consumption of

18   the property group providing service to customers. In this regard, the Company's

19   customers are charged the cost of the property consumed in providing them

20   service during the applicable service period. The more timely return of plant cost

21   under the Equal Life Group Procedure is accomplished by fully accruing each

1   unit's cost during its service life, thereby reducing the risk of incomplete cost

2   recovery.

3 Q. **WHAT FACTORS INFLUENCE THE DETERMINATION OF THE**

4   **RECOMMENDED ANNUAL DEPRECIATION RATES INCLUDED IN**

5   **YOUR DEPRECIATION STUDY REPORT?**

6 A. The depreciation rates reflect four principal factors: (1) the plant in service by

7   vintage, (2) the book depreciation reserve, (3) the future net salvage, and (4) the

8   composite remaining life for the property group. Factors considered in arriving at

9   the service life are the average age, realized life and the survival characteristics of

10   the property. The net salvage estimate is influenced by both past experience and

11   future estimates of the cost of removal and gross salvage amounts.

12 Q. **PLEASE EXPLAIN FURTHER THE ASSUMPTIONS CONSIDERED**

13   **WHEN UTILIZING YOUR DEPRECIATION APPROACH.**

14 A. According to my approach, the Company will recover its un-depreciated fixed

15   capital investment through annual depreciation expense in each year throughout

16   the useful life of the property. The Average Remaining Life Technique

17   incorporates the future life expectancy of the property, the vintaged surviving

18   plant in service, the survival characteristics, together with the book depreciation

19   reserve balance and future net salvage in developing the amounts for each

20   property account. Accordingly, Average Remaining Life depreciation meets the

21   objective of providing a Straight Line recovery of the Company's fixed capital

1   property investments.

2 Q. PLEASE EXPLAIN FURTHER THE GROUP PROCEDURE YOU HAVE

3   USED.

4 A. My depreciation calculations, as applied in this study, follow a group depreciation

5   approach. The group approach refers to the method of calculating annual

6   depreciation based on the summation of the investment in any one plant group

7   rather than calculation of depreciation for each individual unit of plant. In theory,

8   each unit achieves average service life by the time of retirement. Accordingly, the

9   full cost of the investment will have been credited to plant in service by the time

10   the retirement occurs, and likewise the depreciation reserve will be debited with

11   an equal retirement cost. No gain or loss is recognized at the time of property

12   retirement because of the assumption that the property was retired at average

13   service life.

14 Q. WHAT ARE THE NET SALVAGE FACTORS INCLUDED IN THE

15   DETERMINATION OF DEPRECIATION RATES?

16 A. Net salvage is the difference between gross salvage, or the proceeds received

17   when an asset is disposed of, and the cost of removing the asset from service. Net

18   salvage is said to be positive if gross salvage exceeds the cost of removal. If the

19   cost of removal exceeds gross salvage, the result is negative salvage. Many

20   retired assets generate little, if any, positive salvage. Conversely, numerous

21   Company asset groups generate negative net salvage at the end of their lives due

1   to the cost of removal.

2   The cost of removal includes costs such as demolishing, dismantling,

3   tearing down, disconnecting or otherwise retiring/removing plant, as well as any

4   environmental clean up costs associated with the property. Net salvage includes

5   any proceeds received from any sale of plant.

6   Net salvage experience is studied for a period of years to determine the

7   trends which have occurred in the past. These trends are considered, together with

8   any changes that are anticipated in the future, to determine the future net salvage

9   factor for remaining life depreciation purposes. The net salvage percentage is

10   determined by comparing the total net positive or negative salvage to the book

11   cost of the property investment retired.

12   The method used to estimate the retirement cost is a standard analysis

13   approach which is used to identify a company's historical experience with regard

14   to what the end of life cost will be relative to the cost of the plant when first

15   placed into service. This information, along with knowledge about the average

16   age of the historical retirements that have occurred to date, allows an estimation of

17   the level of retirement cost that will be experienced by the Company at the end of

18   each property group's useful life. The study methodology utilized has been

19   extensively set forth in depreciation textbooks and has been the accepted practice

20   by depreciation professionals for many decades. Furthermore, the cost of removal

21   analysis is the current standard practice used for mass assets by essentially all

1   depreciation professionals in estimating future net salvage for the purpose of

2   identifying the applicable depreciation rate for a property group. There is a direct

3   relationship between the installation of specific plant and its corresponding

4   removal. The installation is its beginning of life cost while the removal is its end

5   of life cost. Also, it is important to note that Average Remaining Life

6   depreciation rates incorporate future net salvage which is typically more

7   representative of recent versus long-term historical average net salvage.

8   The Company's historical net salvage experience was analyzed to identify

9   the historical net salvage factor for each applicable property group. This analysis

10   routinely finds that historical retirements have occurred at average ages

11   significantly shorter than the property group's average service life. The occurrence

12   of historical retirements at an age which is significantly younger than the average

13   service life of the property category demonstrates that the historical data does not

14   appropriately recognize the true level of retirement cost at the end of the property

15   group's useful life. An additional level of cost to retire will occur due to the

16   passage of time until all the current plant is retired at end of its life. That is, the

17   level of retirement costs will increase over time until the average service life is

18   attained. The additional inflation in the estimate of retirement cost, is related to

19   those additional years' cost increases (primarily the result of higher labor costs over

20   time) that will occur prior to the end of the property group's average life.

21   To provide further explanation of the issue, several general principles

1   surrounding property retirements and related net salvage should be highlighted.

2   As property continues to age, assets that typically generate positive salvage when

3   retired will generate a lower percentage of positive salvage as compared to the

4   original cost of the property. By comparison, if the class of assets is one that

5   typically generates negative net salvage (cost of removal) with increasing age at

6   retirement, the negative net salvage percentage as compared to original cost will

7   typically be greater. This situation is routinely driven by the higher labor costs

8   that occur with the passage of time.

9   A simple example will aid in understanding the above net salvage analysis

10   and the required adjustment to the historical results. Assume the following

11   scenario: A company has two cars, Car #1 and Car #2, each purchased for

12   $20,000. Car #1 is retired after 2 years and Car #2, is retired after 10 years.

13   Accordingly, the average life of the two cars is six (6) years. Car #1 generates

14   75% salvage or $15,000 when retired and Car #2 generates 5% salvage or $1,000

15   when retired.

16

17	Unit Cost	Ret. Age (Yrs)	% Salv.	Salvage Amount
18	Car #1 $20,000	2	75%	$15,000
19	Car #2 20,000	10	5%	1,000
20	Total 40,000	6	40%	16,000

21

1   Assume an analysis of the experienced net salvage at year three (3).

2   Based upon the Car #1 retirement, which was retired at a young age (2 yrs.) as

3   compared to the average six (6) year life of the property group, the analysis

4   indicates that the property group would generate 75% salvage. This indication is

5   incorrect, however, because it is the result of basing the estimate on incomplete

6   data. That is, the estimate is based upon the salvage generated from a retirement

7   that occurred at an average age which is far less than the average service life of

8   the property group. The actual total net salvage that occurred over the average life

9   of the assets (which experienced a six (6) year average life for the property group)

10   is 40%, as opposed to the initial incorrect estimate of 75%.

11   This is exactly the situation that occurs with the majority of the

12   Company's historical net salvage data, except that most of the Company's

13   property groups routinely experience negative net salvage (cost of removal) as

14   opposed to positive salvage.

15   Q.   **PLEASE EXPLAIN WHAT FACTORS AFFECT THE LENGTH OF THE**

16   **AVERAGE SERVICE LIFE THAT THE COMPANY'S PROPERTY MAY**

17   **ACHIEVE.**

18   A.   Several factors contribute to the length of the average service life which the

19   property achieves. The three major factors are: (1) physical; (2) functional; and

20   (3) contingent casualties.

21   The physical factor includes such things as deterioration, wear and tear and

1   the action of the natural elements. The functional factor includes inadequacy,

2   obsolescence and requirements of governmental authorities. Obsolescence occurs

3   when it is no longer economically feasible to use the property to provide service to

4   customers or when technological advances have provided a substitute with

5   superior performance. The remaining factor, contingent casualties, includes

6   retirements caused by accidental damage or construction activity of one type or

7   another.

8   In performing the life analysis for any property being studied, both past

9   experience and future expectations must be considered in order to fully evaluate

10   the circumstances that may have a bearing on the remaining life of the property.

11   This ensures the selection of an average service life which best represents the

12   expected life of each property investment.

13   Q.   **WHAT STUDY PROCEDURES WERE UTILIZED TO DETERMINE**

14   **SERVICE LIVES FOR THE COMPANY'S PROPERTY?**

15   A.   Several study procedures were used to determine the prospective service lives

16   recommended for the Company's plant in service. These include the review and

17   analysis of historical, as well as anticipated, retirements, current and future

18   construction technology, historical experience and future expectations of salvage

19   and the cost of removal.

20   Service lives are affected by many different factors, some of which can be

21   determined from studying past experience, others of which must rely heavily on

1   future expectations. When physical characteristics are the controlling factor in

2   determining the service life of property, historical experience is a useful tool in

3   selecting service lives. In cases where there are changes in technology, regulatory

4   requirements, Company policy or the development of a less costly alternative,

5   historical experience is of lesser or little value. However, even when considering

6   physical factors, the future lives of various properties may vary from those

7   experienced in the recent past.

8   While a number of methods are available to study historical data, as I

9   mentioned previously, the two methods most commonly utilized to determine

10   average service lives for a company's property are the Retirement Rate Method

11   and the Simulated Plant Record Method. Given that the Company maintains

12   vintaged investment records, the Retirement Rate Method was the method chosen

13   to analyze the historical data.

14 Q. **PLEASE EXPLAIN FURTHER THE USE OF THE RETIREMENT RATE**

15   **METHOD.**

16 A. With this method of analysis, the Company's actuarial service life data, which is

17   sorted by age, is used to develop a survivor curve (observed life table). This

18   survivor curve is the basis upon which smooth curves (standard Iowa Curves) are

19   matched or fitted to then determine the average service life being experienced by

20   the property account under study. Computer processing provides the capability to

21   review various experience bands throughout the life of the account to observe

1   trends and changes. For each experience band analysis, an "observed life table" is

2   constructed using the exposure and retirement experience within the selected band

3   of years. In some cases, the total life cycle of the property has not been achieved

4   and the experienced life table, when plotted, results in a "stub curve." It is the

5   "stub curve," or the total life curve, if the total life curve is achieved, which is

6   matched or fitted to the standard Iowa Curves. The matching process is

7   performed both by computer analysis, using a least squares technique, and by

8   overlaying the observed life tables on the selected smooth curves for visual

9   reference. The fitted smooth curve is a benchmark which provides a basis to

10   determine the estimated average service life for the property group under study.

11   Q.   **DOES SECTION 5 OF THE DEPRECIATION STUDY REPORT**

12   **CONTAIN CHARTS WHICH COMPARE THE ANALYSIS OF THE**

13   **COMPANY'S ACTUAL HISTORICAL DATA TO THE SERVICE LIFE**

14   **PARAMETERS YOU ARE PROPOSING AS A BASIS FOR YOUR**

15   **RECOMMENDED ANNUAL DEPRECIATION RATES?**

16   A.   Yes. The Company's historical plant account records included vintaged

17   retirement data and, therefore, were studied using the Retirement Rate Method.

18   The resulting observed life tables and plottings of the selected Iowa Curves are

19   contained in the depreciation study report in Section 5.

20   Q.   **YOU HAVE REFERRED TO THE USE OF THE IOWA OR SMOOTHED**

21   **SURVIVOR CURVES. CAN YOU GENERALLY DESCRIBE THE**

1   CURVES AND THEIR PURPOSE?

2   A.   The preparation of a depreciation study typically incorporates smoothed curves to

3   represent the experienced or estimated survival characteristics of the property.

4   The "smoothed" or standard survivor curves are the "Iowa" family of curves

5   developed at Iowa State University and which are widely used and accepted

6   throughout the utility industry. The shape of the curves within the Iowa family is

7   dependent upon whether the maximum rate of retirement occurs before, during or

8   after the average service life. If the maximum retirement rate occurs earlier in

9   life, it is a left (L) mode curve; if it occurs at average life, it is a symmetrical (S)

10   mode curve; if it occurs after average life, it is a right (R) mode curve. In

11   addition, there is the origin (O) mode curve for plant which has heavy retirements

12   at the beginning of life.

13   At any particular point in time, actual Company plant may not have

14   completed its life cycle. Therefore, the survivor table generated from the

15   Company data is not complete. This situation requires that an estimate be made

16   with regard to the incomplete segment of the property group's life experience.

17   Further, actual company experience often varies from age interval to age interval,

18   making its utilization for average service estimation difficult. Accordingly, the

19   Iowa Curves are used to both extend Company experience to zero percent

20   surviving as well as to smooth actual Company data.

21   Q.   WHAT IS THE PRINCIPAL REASON FOR COMPLETING THE

1   DETAILED HISTORICAL LIFE AND SALVAGE ANALYSIS?

2 A.   The detailed historical analysis is prepared as a tool from which to make informed

3   assessments as to the appropriate service life and salvage parameters over which

4   to recover the Company's plant investment. However, in addition to the available

5   historic data, consideration must be given to current events, the Company's

6   ongoing operations, Company management's future plans, and general industry

7   events which are anticipated to impact the lives that will be achieved by plant in

8   service.

9 Q.   WHAT IS THE BASIS FOR THE COMPANY'S CURRENT

10   DEPRECIATION RATES?

11 A.   The current depreciation rates are based upon depreciation parameters set forth in

12   a study completed using plant investment data through December 31, 1998 for

13   Bay State Gas Company together with the Broad Group Procedure applied on an

14   Average Remaining Life basis. The current account level depreciation rates

15   composite to an equivalent annual depreciation rate of 3.42 percent when applied

16   to each of the December 31, 2003 account balances. Exh. BSG/EMR-2, page 1-7.

17   B.   SIGNIFICANT CHANGES IN DEPRECIATION RATES
18   BETWEEN THE PRESENT RATES AND THE PROPOSED RATES
19
20 Q.   WHAT ARE THE MOST NOTABLE CHANGES IN ANNUAL

21   DEPRECIATION RATES AND EXPENSE BETWEEN THE PRESENT

22   AND PROPOSED DEPRECIATION RATES AS SET FORTH IN

1   **SECTION 2 OF THE DEPRECIATION STUDY?**

2   A.   With regard to Bay State Gas Company's plant in service, several of the proposed

3   rates reflect marked changes (as outlined in Section 4 of the study) from the

4   current depreciation rates. The accounts for which the most notable depreciation

5   expense changes occurred in comparison to the current depreciation rates include

6   Account 321 - LNG Equipment, Account 376 - Mains, Account 380 - Services,

7   Account 382 - Meter Installations, Account 391.2 - Office Furniture and

8   Equipment - Computer & IT Equipment, and Account 397.2 - Communication

9   Equipment - Metscan Meter Interface Units.

10   The proposed depreciation rate for Account 376 – Mains, increased from

11   1.86 percent to 2.79 percent. The proposed depreciation rate is the result of

12   changes in both the service life parameters for various property components of the

13   account as well as a revision to the future net salvage percent. The average

14   service lives were changed in accordance with the life indications developed

15   through an analysis of the Company's historical data and consideration of future

16   expectations. The proposed average service lives for each of the property

17   categories are discussed and summarized in Section 4 of the study as well as on

18   Table 2. Furthermore, the Company is initiating a program to replace all of its

19   existing bare steel mains. This program will significantly shorten the remaining

20   life of its bare steel mains investment. With regard to the future net salvage

21   estimate, net salvage for this property group was revised from negative ten (10) to

1   negative fifteen (15) percent.

2   The depreciation rate for Account 380 – Services, increased from 4.42

3   percent to 5.08 percent. As with the Company's investment in Mains, the

4   proposed depreciation rate is the product of changes in both the service life

5   parameters for various property components of the account as well as a revision to

6   the future net salvage percent. The average service lives were changed in

7   accordance with the life indications developed through an analysis of the

8   Company's historical data and consideration of future expectations. The proposed

9   average service lives for each of the property categories are discussed and

10   summarized in Section 4 of the study as well as on Table 2. Furthermore, the

11   Company is initiating a program to replace all of its existing bare steel services.

12   This program will significantly shorten the remaining life of its bare steel service

13   investment. With regard to the future net salvage estimate, net salvage for the

14   property group was revised from negative one hundred forty (140) to negative one

15   hundred seventy (170) percent.

16   The depreciation rate for Account 382 - Meter Installations, increased

17   from 1.99 percent to 3.34 percent. The proposed depreciation rate is the product

18   of the application of the estimated applicable service life (which was revised from

19   sixty (60) years to fifty-three (53) years) while the estimated future negative net

20   salvage was increased from negative twenty (20) to negative sixty (60) percent).

21   The depreciation rate for Account 391.2 - Computer & IT Equipment

1   increased from 17.51 percent to 20.33 percent. The proposed depreciation rate

2   increase is the result of the application of the estimated applicable service life.

3   The depreciation rate resulted notwithstanding the fact that the life was revised

4   upward from six (6) years to seven (7) years.

5   The depreciation rate for Account 397.2 - Communication Equipment -

6   Metscan Meter Interface Units, increased from 12.11 percent to 24.17 percent.

7   The depreciation rate increase is being driven by a slight reduction in the

8   underlying service life parameters from ten (10) years to nine (9) years. However,

9   the far larger driver behind the depreciation rate increase is the dramatic increase

10   in the level of retirements and the corresponding reduction in the Company's book

11   depreciation reserve for this account.

12   Conversely, the depreciation rate for Account 321 - LNG Equipment,

13   decreased from 5.22 percent to 3.61 percent. The proposed depreciation rate is

14   the result of the application of the estimated applicable service life (which was

15   revised from twenty-five (25) years to twenty-seven (27) years).

16   Q.   WHAT IS THE NET CHANGE IN ANNUAL DEPRECIATION EXPENSE

17   UNDER THE PROPOSED RATES AS OPPOSED TO PRESENT

18   DEPRECIATION RATES?

19   A.   The change in annual depreciation rates results in a net increase in annualized

20   depreciation expense for the Company's plant in service of $5,653,655, (Exh.

21   BSG/EMR-2, Table 1, Section 2, page 2) in comparison to the depreciation

1   expense produced by the current depreciation rates when applied to the

2   Company's plant in service investment as of December 31, 2003.

3   **Q.**   **WHAT IS THE RESULT OF THE COMPANY'S PROPOSED ACCOUNT**

4   **LEVEL DEPRECIATION RATES?**

5   **A.**   Application of the Company's proposed account level depreciation rates to its

6   December 31, 2003 plant in service produces a composite annual depreciation rate

7   of 4.24 percent.

8   **Q.**   **WHAT IS YOUR RECOMMENDATION TO THE DEPARTMENT?**

9   **A.**   It is my recommendation that the proposed depreciation rates set forth in my

10   depreciation study should be uniformly and prospectively adopted by the

11   Department for regulatory purposes as well as by the Company for accounting

12   purposes.

13   **Q.**   **DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

14   **A.**   Yes, it does.

PROFESSIONAL QUALIFICATIONS
OF
EARL M. ROBINSON, CDP
AUS CONSULTANTS - UTILITY SERVICES
WEBER FICK & WILSON DIVISION

Has over 35 years' experience in the public utility field. Has performed services in the areas of depreciation, original cost, valuation, cost of service and bill analysis for numerous regulatory jurisdictions throughout the Eastern, Midwestern, Southwestern, and Pacific regions of the United States, Western Canada plus various areas of the Caribbean.

EXPERIENCE

1977 to Date

AUS Consultants - Weber Fick & Wilson Division, Camp Hill, Pennsylvania. Various positions - currently President and Chief Executive Officer. Has prepared studies and coordinated analysis related to valuation, depreciation, original cost, trended original cost, cost of service, bill analysis, as well as analysis of expenses, revenues and income for various municipal and an extensive number of investor-owned electric, gas, water, wastewater, and telecommunications utilities.

Studies prepared have required the review of company records, inspection of property, the preparation of property inventories and original costs, preparation and review of mortality studies, selection of proper service lives, life characteristics and analysis of salvage, and analysis of capital recovery impact of changing depreciation methods.

During his many years of experience, Mr. Robinson has been involved in and/or responsible for an extensive quantity of comprehensive depreciation studies. Numerous early year's depreciation studies were prepared manually without the convenience of computer software systems. Subsequent, during the mid/late 1970's, Mr. Robinson became responsible for the completion of the many depreciation studies performed for the firm's clients. As part of that responsibility, Mr. Robinson was involved in not only performing the studies, but also in assisting AUS Consultants' MIS department in developing and testing various computer depreciation models. The studies performed by Mr. Robinson or under his direction have included all types of utilities, including electric, gas, water, wastewater, and telecommunications. During Mr. Robinson's career he has been involved in the preparation of more than a hundred depreciation related projects.

A Certified Depreciation Professional (CDP), Mr. Robinson, as President and CEO of AUS Consultants - Weber Fick & Wilson Division provides services to the firm's clients with regard to depreciation and cost based valuation issues. With more than thirty-five (35) years' experience, he began his career as a staff member of the Plant Accounting Department of United Telephone (now Sprint) Eastern Group Headquarters subsequent to which he has spent the past thirty (30) plus years, as a consultant, preparing depreciation and valuation studies for gas, pipeline, electric, telecommunications, water, and wastewater utilities. In conjunction with the provision of these services, Mr. Robinson has testified on many occasions before numerous regulatory agencies (including state, federal, and property tax agencies throughout the U.S., Canada, and the Caribbean in support of the many studies completed for his diverse list of clients. In addition he has negotiated depreciation rates with various state regulatory agencies, the FCC Staff, and the FERC Staff. Mr. Robinson has also participated in several FCC, State, Company three-way depreciation represcription meetings.

With regard to valuation matters Mr. Robinson has been involved with the development of cost indexes from the earliest part of his career with Weber Fick & Wilson through the present. During his earlier years, he assisted and/or developed and utilized cost indexes to prepare reproduction cost and related fair value determinations for various of the firm's regulated utility clients. Subsequently, he attained extensive experience in preparing custom indexes, replacement cost, and depreciated replacement cost studies, having been responsible for preparing many such cost studies relative to various clients within the telecommunications industry during the past fifteen (15) - twenty (20) year period.

PROFESSIONAL QUALIFICATIONS
OF
EARL M. ROBINSON, CDP
AUS CONSULTANTS - UTILITY SERVICES
WEBER FICK & WILSON DIVISION

He is also responsible for developing and publishing the firm's C.A. Turner Telephone Plant Index (successor to the Handy Whitman Construction Cost Index), a reproduction cost index subscribed to by various operating companies, regulatory agencies, and consultants.

Mr. Robinson is a founding member and past President of the Society of Depreciation Professionals, a professional organization that provides depreciation training, as well as provides a forum for discussion of depreciation issues. He is also a member of the American Gas Association (AGA) Accounting Services Committee and past chairman of the Statistics, Bibliography, Court Regulatory Sub-Committee of the AGA Depreciation Committee. As a member of that organization, he co-authored a publication entitled "An Introduction to Net Salvage of Public Utility Plant". Mr. Robinson has completed various previous presentations on the subject of depreciation studies as well as depreciated replacement cost to industry organizations and to property tax appraiser staffs.

1975 to 1977

Gannett, Fleming, Corddry & Carpenter, Inc. Valuation Analyst in the Valuation Division where his duties and responsibilities included the classifications, analysis and coordination of data in the development of depreciation rates for various companies including telephone, gas, water and electric utilities.

1971 to 1975

Weber, Fick & Wilson, Public Utility Analyst engaged in the unitization and subsequent application of costs in the pricing of inventories for original cost determination, depreciation and salvage studies to determine proper annual depreciation rates and trended original cost studies used in the determination of utility rate base.

1966 to 1971

United Telephone Company of Pennsylvania (now Sprint/United Telephone Company of Pa.). As a staff member of the Plant Accounting Department, his duties and responsibilities included various plant accounting ledgers, unitization of location and mass property accounts, as well as special studies related to insurance and tax valuations of utility plant in service.

TESTIMONY

Jurisdictions testified in include Alberta, Arizona, California, Connecticut, Delaware, District of Columbia, FERC, Florida, Indiana, Illinois, Massachusetts, New Hampshire, New Jersey, New Mexico, New York, Pennsylvania, North Carolina, Rhode Island, South Carolina, and Virgin Islands. Extensive expert testimony has been presented on the subjects including Depreciation, Capital Recovery, Plant in Service Measures of Value, Depreciated Reproduction Cost, and Depreciated Replacement Cost. Numerous additional depreciation studies have been completed and filed in various different jurisdictions for which testimony appearances were not required.

PERSONAL

Education:

Graduate of Harrisburg Area Community College with an Associate of Arts Degree in Accounting, and has undertaken further studies at University Center of Harrisburg. Successfully completed various programs related to service life and salvage estimation, forecasting, and evaluation sponsored by Depreciation Programs,

PROFESSIONAL QUALIFICATIONS
OF
EARL M. ROBINSON, CDP
AUS CONSULTANTS - UTILITY SERVICES
WEBER FICK & WILSON DIVISION

Inc. at Calvin College Campus, Grand Rapids, Michigan. In addition, successfully completed cost of service seminars sponsored by the American Water Works Association. CDP (Certified Depreciation Professional) by Exam 1996.

List of Clients Served

CATV

Storer Broadcasting Company
(DE, MD, MN)

Cable Television Consortium

ELECTRIC

Atlantic City Electric d/b/a Conectiv Power Delivery
Borough of Butler - Electric Dept.
Consolidated Hydro, Inc.
Duquesne Light Company
Hershey Electric Company
Kentucky Utilities
Lockhart Power Company
Louisville Gas & Electric Co. - Elec. Div.
Montana - Dakota Utilities Co - Elec. Div.

Nantahala Power and Light Company
New York State Electric and Gas Corp.
Northern Indiana Public Service Co.
Pennsylvania Power Company
Philadelphia Electric Company
Potomac Electric Power Company
Progress Energy - Carolina
Progress Energy - Florida
Wellsboro Electric Company

GAS

ATCO Gas
  ATCO Pipelines
Atlanta Gas Light Company
Bay State Gas Company
C & T Enterprises, Inc.
  Valley Cities Waverly Gas Company
Canadian Western Natural
  Gas Company Limited
Citizens Gas & Coke Utility
Columbia Gas of Pennsylvania, Inc.
East Ohio Gas
Elkton Gas Service
Granite State Gas Transmission, Inc.
Kansas Gas Service
Louisville Gas & Electric Co. - Gas Division
Montana Dakota Utilities - Gas Division
National Fuel Gas Distr. Corp., NY
National Fuel Gas Supply
NICOR Gas Company
North Carolina Gas Service

North Penn Gas
Northern Indiana Public Service Co.
Northern Utilities, Inc.-Maine
Northern Utilities, Inc.-New Hampshire
Oklahoma Natural Gas Company
Pacific Gas & Electric Company
Paiute Pipeline
Pennsylvania Gas & Water Company
PG Energy Inc.
Pennsylvania and Southern Gas Company
  Valley Cities Division
  Waverly Division
Providence Gas Company
Roanoke Gas Company
Saxonburg Heat & Light Company
Southern Connecticut Gas Company
Southwest Gas Corporation
T.W. Phillips Gas & Oil Company

PROFESSIONAL QUALIFICATIONS
OF
EARL M. ROBINSON, CDP
AUS CONSULTANTS - UTILITY SERVICES
WEBER FICK & WILSON DIVISION

GENERAL CLIENTS

Arthur Andersen
Pricewaterhouse Coopers

Ernst & Young
Standard & Poors

REGULATORY AND GOVERNMENTAL

Arizona Corporation Commission
  Mountain States Telephone & Telegraph
  Southwest Gas Corporation
Baltimore County, MD
Bensalem Township - Water
Bethlehem Authority - Water
Borough of Butler, NJ
Borough of Media Water Works
City of New Orleans, LA
Delaware Public Service Commission
  Diamond State Telephone Company

Delaware River Port Authority
Kansas Corporation Commission
  Southwest Bell
Public Service Comm. of Nevada
  Nevada Bell
Town of Waterford, CT
  Northeast Utilities
Washington, D.C. - PSC
  C&P Telephone Company
  Potomac Electric Power Company

TELECOMMUNICATIONS

Ace Telephone Association - IA & MN
AirTouch Communications
ALLTEL Pennsylvania, Inc.
BellSouth Telecommunications
Buffalo Valley Telephone Company
Cellular Industry Study Group
 AT&T Wireless
 BellSouth Communications
 GTE Mobilnet
Chenango & Unadilla Telephone Company
Cingular Wireless California
Commonwealth Telephone Company
CTC of Michigan
CTC of Virginia
Denver & Ephrata Telephone and
 Telegraph Company
Empire Telephone Corporation
Illinois Consolidated Telephone Co.
Jamestown Telephone Corporation
Leesport Telephone Company
Lewisberry Telephone Company
Los Angeles Cellular Telephone Co.
MCI International, Inc.
MCI Telecommunications Corp.
MFS Communication Company, Inc.
Marianna & Scenery Hill Tel. Co.
Mid State Telephone Company

Motorola, Inc.
New Jersey Telephone Company
The North-Eastern Pennsylvania Tel. Co.
Pacific Bell
PACTEL CELLULAR
Paging Industry Study Group
 AirTouch Paging
 Mobile Comm
 Paging Network, Inc.
 Skytel
 USA Mobile Communications
Quaker State Telephone Company
Qwest Communications Corporation
RCA Global Communications, Inc.
SBC Ameritech Corporation
 SBC - Ohio
 SBC - Wisconsin
Southwestern Bell Telephone Company
Standard Telephone Company
Telecommunications d'Haiti
Telephone Utilities of Pennsylvania
United Telephone Company of New Jersey
Verizon Wireless
 Verizon - California
 Verizon - Wyoming
Virgin Islands Telephone Corporation
WilTel, Inc.

PROFESSIONAL QUALIFICATIONS
OF
EARL M. ROBINSON, CDP
AUS CONSULTANTS - UTILITY SERVICES
WEBER FICK & WILSON DIVISION

WATER

Artesian Water Company
City of Auburn
Bethlehem Authority - Water
California Water Service Company
California - American Water Company
Citizens Water - California
Citizens Water - Arizona
Consumers New Jersey Water Company
Clinton Water Company
Commonwealth Water Company
Dauphin Consolidated Water Supply Co.
Elizabethville Water Company
City of Fairfax
Garden State Water Company
Hackensack Water Company
Hershey Water Company
Illinois American Water Company
Indian Rock Water Company
Indianapolis Water Company
Iowa-American Water Company
Keystone Water Company
Manufacturers Water Company
Masury Water Company
Middlesex Water Company
Monmouth Consolidated Water Company
New Haven Water Company
New Jersey Water Company
New Mexico-American Water Company, Inc.

Newtown Artesian Water Company
New York-American Water Company
Ohio-American Water Company
Palm Coast Utility Corporation
Pennichuck Water Works
Pennsylvania-American Water Company
Pennsylvania Gas and Water Company
Pennsylvania Water Company
Erie & Sayre Divisions
Philadelphia Suburban Water Company
Pinelands Water Company
Public Service Water Company
Riverton Consolidated Water Company
Roaring Creek Water Company
Rock Springs Water Company
Shenango Valley Water Company
Southern California Water Company
Spring Valley Water Company
Tidewater Utilities, Inc.
United Water - Delaware
United Water - Toms River
United Water - New Jersey
United Water - Pennsylvania
United Water - Virginia
Virginia American Water Company
Western Pennsylvania Water Company
York Water Company

WASTEWATER

California - American Water Company
Citizens Sewer - Arizona
New Jersey Water Company
Sewer Districts

Palm Coast Utility Corporation
Pinelands Sewer Company
Wynnewood Sewer Company

PROFESSIONAL QUALIFICATIONS

CDP (Certified Depreciation Professional) by Exam during October, 1996

PROFESSIONAL AFFILIATIONS

American Water Works Association
American Gas Association
American Railway Engineering Association
Pennsylvania Gas Association
Pennsylvania Municipal Authorities Association
Member AGA Accounting Services Committee
Society of Depreciation Professionals-Founding Member, Chairman Coordinating and Membership Committees,
Treasurer, President, and Past President

PROFESSIONAL QUALIFICATIONS
OF
EARL M. ROBINSON, CDP
AUS CONSULTANTS - UTILITY SERVICES
WEBER FICK & WILSON DIVISION

PUBLICATIONS

AGA/EEI Depreciation Accounting Committee, Contributing Author 1989, "An Introduction to Net Salvage of Public Utility Plant"

"Replacement Cost and Service Life Studies", *Journal of Property Tax Management*, Fall 1994, Volume 6, Issue 2

SPEECHES AND PRESENTATIONS

"Depreciated Replacement Cost", Institute of Property Taxation - 18th Annual Conference, San Francisco, CA

"RCNLD Issues for Utilities", The National Association of Railroad & Public Utilities Tax Representative, 1997 Annual Conference, North Lake Tahoe, NV

"Useful Service Lives of Cellular Industry Assets", State of Florida, Department of Revenue Industry/Government Task Force (April 1997)

"Appraisal and Valuation Issues Associated with Technology Changes within the Wireless Industry", 30th Annual Wichita Program - Appraisal for Ad Valorem Taxation of Communications, Energy, and Transportation Program, Wichita State University - July 30-August 3, 2000

"Physical/Functional Obsolescence, Residual Values/Floors (Net Salvage)", 32th Annual Wichita Program - Appraisal for Ad Valorem Taxation of Communications, Energy, and Transportation Program Wichita State University - July 28-August 1, 2002

"Depreciation Study Preparation", AGA Accounting Services Committee/EEI Property Accounting & Valuation Committee, Lake Tahoe, Nevada - October 28, 2002

"Use of Replacement Cost to Value High Tech Equipment" Southeastern Association of Tax Administrators, 53rd. Annual Conference, Savannah, Georgia - July 14-July 16, 2003

"Property Tax: Use of Replacement Cost in the Appraisal of Telecommunications Companies", Western States Association of Tax Representatives (WSATR), WSATA 2003 Annual Meeting, Austin, TX - Sept. 9, 2003

"Valuation of Assets", AGA Accounting Services Committee/EEI Property Accounting & Valuation Committee, Scottsdale, Arizona - December 9, 2003

"Net Salvage Issues In Rate Cases", AGA Accounting Services Committee/EEI Property Accounting & Valuation Committee, San Antonio, Texas - May 17, 2004

PROFESSIONAL QUALIFICATIONS
OF
EARL M. ROBINSON, CDP
AUS CONSULTANTS - UTILITY SERVICES
WEBER FICK & WILSON DIVISION

SUMMARY OF TESTIMONY APPEARANCES

Jurisdiction	Client	Docket/Application	Subject
Alberta	Canadian Western Natural Gas Company Limited	980413	Depreciation
	ATCO Pipelines	1292783	Depreciation
Arizona	Arizona Corp. Comm./ Mtn. Bell	9981-E-1051	RCN/RCND *
	Arizona Corp. Comm./ Southwest Gas Corp.	U-1551-80-70	RCN/RCND *
California (State Board of Equalization)	MCI Telecommunications Corporation	274	Replacement Cost/ Depr. Repl. Cost
		SAU87-38	Replacement Cost/ Depr. Repl. Cost
		SAU91-101	Replacement Cost/ Depr. Repl. Cost
	Southern California Water Company	ABJ-4	Depreciation
Connecticut	Southern Connecticut Gas Co.	89-09-06	P.I.S. Measures of Value and Depreciation
Delaware	Artesian Water Company	82-20	Depreciation
		87-3	Depreciation
	United Water - Delaware	96-164	Depreciation
		98-98	Depreciation
	Delaware Public Service Comm./ Diamond State Telephone Co.	81-8	P.I.S. Measures of Value and Depreciation
	Tidewater Utilities, Inc/ Public Water and Supply, Inc	99-466	Depreciation
District of Columbia	Potomac Electric Power Co.	F.C. 869	Depreciation
	Washington, DC PSC/ C&P Tel. Corp.	F.C. 777	Depreciation
	Washington, DC PSC/ Potomac Electric Power Co.	F.C. 785	Capital Recovery/ Depreciation
		F.C. 813	

PROFESSIONAL QUALIFICATIONS
OF
EARL M. ROBINSON, CDP
AUS CONSULTANTS - UTILITY SERVICES
WEBER FICK & WILSON DIVISION

Jurisdictions	Client	Docket	Subject
FERC	Granite State Gas Transmission, Inc.	RP91-164-000	Depreciation
	Paiute Pipeline	RP96-306-000	Depreciation
Florida (County of Duval)	BellSouth Telecommunications	Petitions 1795-1800	Replacement Cost/ Depr. Repl. Cos
(County of St. Lucie)	BellSouth Telecommunications	1999 Petitions	Replacement Cost/ Depr. Repl. Cost
Illinois	Illinois - American Water Company	00-0340 02-0690	Depreciation Depreciation
	Illinois Consolidated Telephone Co.	81-0264 82-0623	RCN/RCND * RCN/RCND *
Indiana	Northern Indiana Public Service Company	Cause No. 41746	Depreciation
Kansas	Kansas Gas Service	03-KGSG-602-RTS	Depreciation
Kentucky	Kentucky Utilities	Case No. 2003-00434	Depreciation
	Louisville Gas & Electric Electric Gas	Case No. 2003-00433	Depreciation
Massachusetts	Bay State Gas Company	92-111	Depreciation
New Jersey	Atlantic City Electric d/b/a Conectiv Power Delivery	ER03020110	Depreciation
	Borough of Butler/ Butler Elec. Dept.	792-84	Valuation of Plant in Service Customer Revenue and Purchase Power
	Commonwealth Water Co.	842-100	Depreciation
	Consumers New Jersey Water Company	WR00030174	Depreciation
	Garden State Water Co.	WR91091483	Depreciation

PROFESSIONAL QUALIFICATIONS
OF
EARL M. ROBINSON, CDP
AUS CONSULTANTS - UTILITY SERVICES
WEBER FICK & WILSON DIVISION

Jurisdictions	Client	Docket	Subject
	Middlesex Water Company	WR8602-240	Depreciation
		WR90080884J	Depreciation
		WR96110818	Depreciation
	Monmouth Cons. Water Co.	8312-1113	Depreciation
	New Jersey Water Company	834-292	Depreciation
	United Water Resources (formerly Hackensack Water Co.)	8506-663	Depreciation
		WR90080792J	Depreciation
		WR95070303	Depreciation
	Toms River Water Company	WR95050219	Depreciation
New Hampshire	Northern Utilities, Inc.	DR91-081	Depreciation
New Mexico	New-Mexico American Water Company	2813	Depreciation
		03-00206-UT	Depreciation
New York	New York-American Water Co.	28911	Depreciation
	Spring Valley Water Co., Inc.	89-W-1151	Depreciation
		92-W-0645	Depreciation
North Carolina	Nantahala Power and Light Co.	E-13, SUB157	Depreciation
Pennsylvania	Borough of Media Water Works	R-912150	Depreciation
	Columbia Gas of Penna.	R-80031129	Depreciation and Valuation
	Commonwealth Telephone Co.	I-00920020	Depreciation
	Keystone Water Company	R-842755	Capital Recovery/Depreciation
		R-842756	Capital Recovery/Depreciation
		R-842759	Capital Recovery/Depreciation
	Mid Penn Tel. Corp.	R-80071264	Depreciation
	Penna.-American Water Co.	R-891208	Depreciation
	Penna. Gas & Water Co. - Gas Division	R-821961	Depreciation
		R-832475	Depreciation
	Penna. Gas & Water Co. - Water Division	R-822102	Depreciation
		R-850178	Capital Recovery/Depreciation
		R-870853	Capital Recovery/Depreciation

PROFESSIONAL QUALIFICATIONS
OF
EARL M. ROBINSON, CDP
AUS CONSULTANTS - UTILITY SERVICES
WEBER FICK & WILSON DIVISION

Jurisdictions	Client	Docket	Subject
	Penna. Gas & Water Co. - Scranton Division	R-901726	PIS Meas. of Value/Depreciation
		R-922482	Depreciation
	Penna. Gas & Water Co. - Spring Brook Division Nesbitt Service Area	R-911966	PIS Meas. of Value/Depreciation
	Crystal Lake Service Area	R-922404	PIS Meas. of Value/Depreciation
	Ceasetown/Watres Service Area	R-93266	Depreciation
	Penna. Power Company	R-811510	PIS Meas. of Value/Depreciation
		R-821918	PIS Meas. of Value/Depreciation
		R-832409	PIS Meas. of Value/Depreciation
		R-842740	PIS Meas. of Value/Depreciation
		R-850267	PIS Meas. of Value/Depreciation
		R-870732	PIS Meas. of Value/Depreciation
	Pennsylvania & Southern Gas Company	R-870686	Depreciation
	PG Energy Inc.	R-963612	PIS Meas. of
	Value/Depreciation	R-984280	PIS Meas. of Value/Depreciation
	Philadelphia Suburban Water Company	R-911892	Depreciation
		R-922476	PIS Meas. of Value/Depreciation
		R-932868	PIS Meas. of Value/Depreciation
	Riverton Consolidated Water Co.	R-842675	Capital Recovery/Depreciation
	United Water - Pennsylvania	R-00973947	Depreciation
	Western Pennsylvania Water Company	R-842621	Capital Recovery/Depreciation
		R-842622	Capital Recovery/Depreciation
		R-842623	Capital Recovery/Depreciation
		R-842624	Capital Recovery/Depreciation
		R-842625	Capital Recovery/Depreciation

PROFESSIONAL QUALIFICATIONS
OF
EARL M. ROBINSON, CDP
AUS CONSULTANTS - UTILITY SERVICES
WEBER FICK & WILSON DIVISION

Jurisdictions	Client	Docket	Subject
	Wellsboro Electric Company	R-00016356	Depreciation
Rhode Island	Providence Gas Company	1914	Depreciation
		2286	Depreciation
South Carolina	Lockhart Power Company	87-435-E	Depreciation
Virgin Islands	Virgin Islands Tel. Corp.	264	Depreciation
		314	Depreciation
		316	Depreciation

*   Reproduction Cost New/Reproduction Cost New Depreciated.